

# IMPULS

# 12 E



IMPULS/DUC

12 E



## COLOFON

The DUTCH DISCOVERY USERS CLUB magazine

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A while ago, I took the plunge and bought a "real" printer. In a large store, I came across a nice printer with all the trimmings. It even had NLQ, and the price was quite low and even I could afford that! This printer, a General Electric TXP-1000, works with thermic paper and prints incredibly nice clear letters. In exchange for that though, it requires this thermic paper, or an expensive thermic ribbon combined with normal (preferably glazed) paper. Now I am a student, and I need to put considerable amounts of text on paper. Pretty soon a disadvantage of this thermic printer became clear: it uses ribbon even for spaces!! If I set the left margin at 8 with Tasword 2 the printer wastes 8 character breadths of ribbon on each 64 character line! As the ribbons cost twenty guilders each, this soon adds up to two guilders fifty! The easiest solution was to let the printer define the left margin, and not the program.

With my printer one does that as follows:- For a left margin at 123 pixels you input the code LPRINT CHR\$(27); CHR\$(73);"123";CHR\$(13). You can assimilate this in Tasword quite easily. The actual print routine is in LINES 250-290. LINE 250 initialises the software. Address 60927 contains the number of spaces for the margin. By intercepting this number, replacing 0, and using it sneakily ourselves and then putting it back in its original place afterwards, we can fool Tasword and the printer.

Add the following:-

```
265 CLOSE#3:OPEN#3;"B"          (you probably have this already)
266 LET U=60927:LET V=PEEK U: LET
    T$=STR$(12* V) POKE U,0      (1 char=12pixels)
267 IF LEN T$<3 THEN LET T$="0"+T$:GOTO 267
268 LPRINT CHR$ 27;CHR$(73);T$
290 RANDOMIZE USR 59806:POKE U,V:GOTO 10
```

General Electric TXP 1000 routines.

I assume that there are some members who have this printer or a similar one with 16 bits graphic mode to ESC 94 protocol. For these members the following programs will probably soon appear on DUC-disk 4.

TXP.TASW: A Tasword that uses the resources of both the printer and the Discovery extensively, with possibilities for subscript, Form Feed, 3-col.directory, etc. With "ribbon saving" left margin facility.

LARGEDUMP: An enormous A4 dump in basic (Epson comp.)

DUMP 23296: An extensive screendump: format and placing on the page can be ordered with RANDOMIZE X:RANDOMIZE usr 23296.

- x=1: small dump,left
- x=2: small dump,centre
- x=3: small dump,right
- x=4: large dump,centre

The routine is in the printerbuffer and is "clean" (resets printer after use.) 100% Mcode!

CHARDESIGN: To "draw" strange texts.(e.g. Chinese)

Your text goes into an array c\$ as graphic text and can be directly SAVED or PRINTed.

A.Hoornweg



Once upon a time, a friendly horse gave this little ducky a bag with what were once four Speccies. They had all deteriorated to rubber ducks. As young ducks should be, I was curious, and keen to learn things. Little duckies have a lot to learn, and so had 395. Well then, did you ever see a duck with wellies on? I got mine on and went straight into the deep end. I was hooked on Speccies. Got it all heated up and started soldering, an occupation not completely clear of danger! After a bit, ONE Speccie awoke to consciousness, and not long after, a second one. Very soon, one grew so quickly that I had to start calling it PLUS, because it was bigger than the others.

Autumn had arrived, and the leaves were falling; another good reason for staying at home. But what else happens in the Autumn? Right, then there are queues at the Utrecht Exhibition Centre, and lots of duckies queue up there too. What are they doing? Of course, they go and admire all the arithmetic machines at the Exhibition. In brief, the H.C.C. days had arrived again, and as a little ducky you don't want to miss a thing!

I must rectify the above. It was Autumn when another little duck began to break out of its shell, so the tales in the earlier paragraphs were still in the incubator. Still, to continue with my story....At that famous show in Utrecht, this little ducky got a revelation. The first one. The shell broke open, and after seeing the show the ducky crept out of its shell. Only a few days later it went to visit Uncle DUC and since then it is known as number 395. It really felt that it was a lucky little ducky, and grew and grew, just like the number of Speccies. Some have grown up, and others have still a lot to learn. If all goes well, a ducky can grow until it is a 128K one. Then it really is big and strong.

Well anyway, after the revelation, this ducky did a lot of nosing around and quacking with other birds. Not ducks, but geese I think. Ducks can learn a lot from them too. Moreover, if they are not careful they too can develop into geese. Still, after one discovery, you want to have more, so you start nosing around in dustbins and second-hand shops. The things you can find there!! One day, there was a saucer spinner lying there in a lucky dip barrel, and as the rest of this tale will tell, this was revelation number two! The label said "two \* forty, defective." (u/s) Now, you cannot get conned for just twelve and a half guilders, so I plunged again. I spent three cold and frosty winter evenings mucking about, but no results. So, I put the saucer spinner back in the cupboard. For the time being! I soon started again, though, and did all sorts of things and..yes you've guessed it..suddenly I jumped for joy; 178K bytes on a slack saucer!

Then there was another one of those gatherings in Utrecht where lots of duckies attended, and 395 went back to the "source." This ducky bought a ready-made hunk of miracle (type 6116). It's called a C-mos static RAM. Another beast on stage! Muck about with the first revelation; and yes,  $14070=0$ , so that is Hunkey Dorey. Now let's get typing. Did a couple of pages out of DUC number 8, and it came out perfect. Great, now let's get it to



Sometimes it is preferable to be able to use a program in both 48k and 128k mode, without losing the advantages of a 128k model. To achieve this, we must add a line to the program, so that the program itself can test in which mode the SPECTRUM is, and load the corresponding version of the required program.

It was no simple task to discover a usable difference between the two modes. Initially I used the fact that the UDG's 'U' and 'T' change into the tokens "SPECTRUM" and "PLAY" when turning into 128k mode. However, I was looking for a criterium a lot simpler to utilize. I finally found the golden egg in the system variables. It turned out that REPPER (REPetition PERiod) gave a standard value of 5 at adress 23562 in the 48-mode, and actually became 5 in the 128k mode. In what way we can use this is shown in the next BASIC lines:

```
9000 LET M48=PEEK 23562=5
9010 PRINT 128-(80 AND M48);"-mode"
```

The first line sets the value of a comparison in M48. This (or direct PEEK 23562=5) acts as a 'boolean' for the 48-mode:

```
M48 is 1 (true ) in the 48-mode
M48 is 0 (untrue) in the 128-mode
```

The second line serves a demonstration purpose; you could here use M48 in a conditional jump-command.

In this way your computer can test to see whether it is in 128k mode before executing a 128k command. Be this not the case, the program can always jump to another line for 48k execution.

I use this method in a RUN program to allow it to choose between "TASWORD 3" and "TASWORD 128", or between "ART STUDIO 48" and "ART STUDIO 128". In this way the correct version is always selected after 'RUN'.

*E A J Huisman - Karveel 49-67 - 8242 VT Lelystad - Holland*

=====



RUN. Have a party with the box of tricks, sectors, tracks, and sides. Back to the nest, and after a bite of duck fodder carry on with the building bricks. Result? I kept jumping out of the nest, and a slack saucer suddenly had 826 bytes in battle order: 11 sectors; 83 tracks; and 512 bytes per block. And all that on a 5.25 inch smart line! Terrible, don't you think? How it all happened? Me not know, me little ducky and me not talk!

This very allegorical story can only be meant for the better kind of insider!

The Editors



## QUESTIONS AND ANSWERS

Regularly, questions about hard- and software reach the DUC. In order that all could profit from the answers, we will be placing questions and answers in the form of an article. Of course we do not claim to have all the answers. If you as reader have another or better answer to a question, or can explain something in detail, the DUC editors will certainly reserve space for your letters.

Q. Programs delivered with the AMX mouse are not Opus-compatible. How do I get them to work anyway?

A. Indeed. Loading and Saving in the accompanying program is a joy only cassette and microdrive users can enjoy. Of course it is essentially possible to alter the program to fit our needs but.... you have to be well versed in mc to do so. Ton Al, our program-bank keeper, will contact software firms to see what can be done. In the meantime we can recommend the program 'Art Studio'. This program does work with the AMX-mouse and there is a conversion program for Opus users.

Q. Does the DUC have an overlay for the cassette version of Art Studio?

A. No, and there won't be one. Try and get the microdrive version.

Q. Will there be a 128k version of ART STUDIO for the DISCOVERY?

A. YES! Marcel van Dongen is busy customizing the program. Wait a while longer!

Q. Is a 5 1/4" drive faster or slower than a 3.5"?

A. Both are equally fast. Speaking of which, Marcel van Dongen is also busy with a utility to load progs 16 times as fast from disk, be it 3.5" or 5 1/4".

Q. Can I use the 'COPY' command to make a screen print on my 80+ column printer?

A. No. When the Spectrum finds a COPY command, it jumps straight to the Spectrum-ROM and executes a series of actions. You can circumvent some things with a 'dummy' command, (eg COPY 1). In the next magazine we will print a routine enabling OPUS users to execute a screendump by the simple command 'SCREEN\$'

Q. - Who has experience with the program Musicbox 128 and where can I buy one?

- Who has worked with MIDI-interfaces and who has a keyboard and/or MIDI-interface for sale?

- Are there diskprograms for communication (300/300 and/or 1200/75) for sale?

John Bakkers - tel. 10-4750117 (18-22)

More questions and answers next time!!!!!!

Editors DUC



## MISCOVERIES

Yes, yes, we did it again. In some previous editions of the magazine several errors have been found. We will try to put them right in our "Miscoveries" section.....

```

-----
DUC-magazine      JR   C, SKIP should read      JR   NC, SKIP
no. 9,            SKIP LD  HL, #03      "      "      SKIP LD  (HL), #03
page 22           INC  HL      "      "      INC  HL
                  LD   HL, #13      "      "      LD   (HL), #13
  
```

A byte was forgotten in the DATA-list at LINE 5300....43,43,43, 61,92,54,...should read...43,43,43,34,61,92,54,...  
The CLEAR after LINE 5310 should read: CLEAR 32767 ==

Then we have a tip from Mr. Scholte in Leeuwarden. A Spectrum friend tried out the video amplifier shown in a previous mag. He did not get the results he expected. The amplifier seemed to be more of a "weaker". He didn't give up though, and obtained a reasonable improvement of the monitor picture using only a transistor and nothing else. However, maybe this will only work in combination with the cut-off condenser C65 and a Philips BM 7452 or a similar type of monitor. The trick works like this:- Buy a transistor type 2N 3904 (55 p.). Solder the base of the transistor to the signal leg of the Spectrum modulator. Connect the emitter of the transistor to the signal point of the (possibly) already fitted cinch chassis part, or else to the video cable. Solder the third leg of the transistor to the 5 volt point on the modulator and that's it. The monitor earth connection stays connected to that of the modulator.

```

      x x x      B= base              x x x tv connection
      x          x                    x x
x C B E x C= collector      x x x x x x x x
x          x                    x          x
x x x x x x E= emitter      x          x
Soldering side transistor  --x signal      x top view of
                          x          X Spectrum-
                          --x 5 volt      x modulator.
Thanks due to Kees Enklaar.  x x x x x x x x
  
```

Further to my article about the procedures MEMO and CALCULATOR the following: these procedures use window 2 that is at the bottom part of the screen. When finished, the screen goes back to window 1 where the main program runs. Since the screen returns to the state it was in before these procedures were called, one can define an overlapping window, or alternatively, window 0 can be used. (the whole screen.)

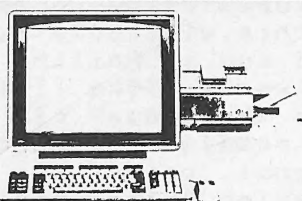
H. Hockx



## Software, games

Golf	fl 32,-
1942 (arcade)	36,-
Konami's Coin-op Hits	39,-
(o.a. Green Beret, PingPong)	
Academy	36,-
Star Gilder (ook 128 K)	59,-
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Lighthforce	32,-
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Sam Fox strippoker	36,-
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Artist II, tekenprogramma	59,-
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Arkanoid, de hit van '87?	29,-

## Aanbieding 1



IBM compatibels v.a. 999,- ex. btw.  
Ook software en div. kaarten leverbaar.

## Software, serleus

Tasword III, cart.	fl 69,-
Tascopy, screendump	45,-
Tasprint, 6 fonts	45,-
Tas-diary, dagboek	45,-
Mini-Office	29,-
Omnicalc	69,-
Skip-64, 64 kolom	19,-
Art Studio	65,-
Masterfile	69,-
Beta Basic	69,-
Laser Genius	65,-
Laser Basic	65,-
Laser Compiler	65,-

## Aanbieding 2

### DISCIPLE

Disk-interface voor 48 - 128k Spectrum, incl. printer-, joystick- en net-workpoorten. Ook met Snap-shot-button voor wegsaven naar disk van elk programma. (48K programma's laden binnen 4 sec.!!) **fl 345,-**

Cumana Disk-interface voor Sinclair Q.L. **fl 295,-**

3 1/2 - diskdrives  
1 Mbyte.  
Compleet vanaf **fl 500,-**

## Aanbieding 3



ZX-Spectrum Plus Twee

**fl 499,-**

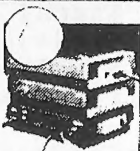
## Software, 128 K.

Art Studio 128 k	89,-
Star Glider	59,-
Winter Games	39,-
Knight Time	19,-
3-weeks in paradise	29,-
Music Box	45,-
Tasword 128	65,-
Zub	19,-
Glider Rider	39,-
Samanta Fox Strip	39,-
Rasputin	36,-
Fairlight	36,-
Thanatos	39,-
Gladiator	36,-
Laser Genius (Assembl.)	65,-
Anal of Rome	39,-

## Opus-disk Software

Grootboek Opus. Nederlands met 600 mutaties p.p. incl. kas, bank en giro-boek. Alleen voor 80-koloms printers. (ook op cartridge verkrijgbaar) **89,-**  
Tascopy Opus **45,-**  
Masterfile **69,-**  
Business Pack **59,-**  
Tasword III, the final wordprocessor **79,-**

## Aanbieding 4



**Tandata**

**fl 360,-**

Compleet modern pakket voor Sinclair QL incl. auto-dial en auto-answer  
Elke QL-bezitter start nu z'n eigen dalabank voor maar

## Printers

Centronics G.L.P. een 80-koloms printer voor normaal papier. Met ser. en par. interface. Div. letter-typen o.a. N.L.Q. **445,-**  
Citizen 120 D, schitterende par. printer met vele mogelijkheden, o.a. proportioneel, inversie, N.L.Q. **795,-**

## Monitors

Philips 7542, wit	295,-
Philips 8802, RGB kleur	745,-
Philips 8803, Hi-res kleur	895,-

## Diversen

\* **Seiko RC-1000** polsterterminal voor opslag van max. 80 adressen, telefoonnummers en/of afspraken. Volledig programmeerbaar via computer. Verkrijgbaar in diverse uitvoeringen; o.a. Spectrum, QL, IBM vanaf 99,-

## Sinclair Q.L. hardware

Sinclair QL, compleet	399,-
Miracle modem	229,-
NLQ-printer, vanaf	445,-
512 K geheugenuitbreiding	449,-
Cartridges, 10 stuks	75,-

## Aanbieding 5



AMX-muls, incl. software

**fl 249,-**

## ZX-Spectrum Hardware

Multiface One	175,-
Multiface One 128	199,-
Videoface Digitiser	249,-
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VTX-5000 modem	149,-
ZXL-printinterface	199,-
3 1/2" diskette	4,-
Konix Speedking, joystick	39,-
Joystick Interface	49,-
Saga Elite, toetsenbord	275,-
Saga TWO-plus	225,-
Opus Discovery	495,-

**POSTORDER: BEL 01820-20581**  
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hardware fl 5,-  
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In Impuls 11-12 I already wrote an article for TW2 and SW about the printing of text files in 2 columns with more than 64 characters, and using the more presentable Elite font. With that program, the columns followed each other in the file but were printed alongside each other using a special printing routine.

TW3 however, has as an advantage that the two columns can be entered alongside each other in the file, and this means that printing can be effected in the normal TW3 way without the need for a special printing routine.

However, it is not very handy typing the columns alongside each other, for it is then quite difficult to edit lines; merging or deleting lines or blocks can only be done to both columns at the same time, and shifting in relation to each other is not possible. Trying to use Wordwrap or Justify can be a disaster too. Therefore, the columns must be input one after the other, and only when everything is correct should they be put alongside each other. After that it is possible to make some small corrections, and finally, the printer control codes and two-column lines such as headings can be typed in.

However, in order to MERGE columns -typed after each other in text files- alongside each other, we still need a special routine. Since it sometimes happens that a long BASIC listing has to be printed on a single page---it is just possible to get that done using "condensed" mode with three columns each 32 characters wide, divided by four spaces---the possibility of doing this has been included in the following routine.

SAVE this program with: "tw3 TO kol" LINE 4

```

1 FOR r=2 TO n:
  INPUT #4; LINE t$: LPRINT r$(r);t$(2 TO )
  NEXT r: RETURN
2 FOR r=1 TO n:
  INPUT #4; LINE r$(r):
  NEXT r: IF NOT m THEN RETURN
3 FOR r=1 TO n:
  LET t$=INKEY$#4: INPUT #4; LINE r$(r,t TO ):
  NEXT r: RETURN
> 4 INPUT "LOAD-name ";r$;" Md-no ";r,
  "SAVE-name ";t$;" Md-no ";t,
  "# cpl left ";l;" # cpl cntr ";m,
  "# lines left ";n
5 OPEN #3;"m";t;t$: OPEN #4;"m";r;r$:
  DIM r$(n,1+l+m): LET t=1+2: GO SUB 2
6 INPUT #4; LINE t$: LPRINT r$(1, TO l);r$(1,t TO );t$(2 TO )
  : GO SUB 1: CLOSE #3: CLEAR #

```

After LOADING the routine, the cartridge can be replaced. If possible, use two drives as that works more quickly. If there are two columns, then reply to the question on the number of characters in the centre with 0. The spaces between the columns should be included in the numbers for "left" and "centre". On top of that before you begin you have to know how many lines the left hand column has, i.e. the whole page, for you will be asked that as well.



Besides a number of advantages when compared to other word processing programs, TW3 has a few less pleasing features in my opinion.

One of these is the not so terribly good legibility of the text which is caused by the type of letters used. This cannot be due to the fact that with 64 cpl the characters can only have half the width of the ordinary Spectrum letters, for the characters in Spectral Writer are also only four pixels wide and yet they are more legible. The latter are better because they use as many horizontal and vertical bits as they can so that the pixels have better connections than with diagonals. This makes them look a bit rectangular.

Fortunately, comparing the Tasword letters with those of Spectral Writer gives us the rather simple possibility of improving their legibility, namely using SW characters in TW3. That is much easier than designing a completely new font of characters. (although that too can be done with the help of my program in IMPULS 51-28.)

The Spectral Writer manual fortunately shows us where the table with the 96 "dot patterns" of 8 bytes begins; viz. at address 64369 i.e. at the very end of memory. It also tells us that only the four most significant bits are used, the four at the left therefore. The TW3 manual has absolutely no information on this matter.(!) It transpires however that the 96\*8 bytes start at address 38400, 512 further than the LOAD-address of TASTABLE therefore and that the right-halves of these bytes should be input here. So, proceed as follows:

LOAD Spectral Writer first, go to the Menu using STOP, choose the D for Basic, and then type in the following direct commands:-

```
FOR a=64639 TO 64639+96*8:
  POKE a,PEEK a/16: NEXT a
```

This will move all the bits from left to right, and you can then put everything on tape by:-

```
SAVE "tw 96"CODE 64639,96*8
```

Now LOAD TW3, after a VERIFY and RESET if wished, and go to the Menu by pressing STOP, but now use B for Basic and then enter :-

```
LOAD "tw 96"CODE 38400: RUN
```

to get the SW characters in TW3. If you press T you will see them. Although there are other ways of doing this, this seemed to me to be the easiest. You can now SAVE this version of TW3 in the usual way.

If you do not have SW, there are other possibilities:-

- Remit f 7.50 to the "Stichting Impuls Bestelgiro" in Leiden, Giro account number 5693775 mentioning "tw 96". You will be sent a cassette with just the 96 characters which you can LOAD into TW3 with LOAD ""CODE .
- Make your "tw 96" yourself using the DATA lines given hereunder obtained with the above program (in a somewhat modified form.)

*E H F Weijgers - Wilhelminalaan 42 - 2625 KH Delft - Holland*



```

1 FOR r=r TO s:
  LET r$=q$: LET p$=STR$ r: LET r$(5-LEN p$ TO 4)=p$
2 FOR k=14 TO 42 STEP 4:
  LET p$=STR$ PEEK a: LET r$(k-LEN p$ TO k-1)=p$:
  LET a=a+1: NEXT k: LPRINT r$;: NEXT r: LPRINT: RETURN
> 3 INPUT "startadres",a,"startline ",r,"stopline",s'
  "SAVE-name",p$,"drivenumber",k: OPEN #3;"m";k;p$
4 LET q$="      DATA      '      '      '      '      '
  +CHR$ 13+CHR$ 10: GO 'SUB' 1: CLOSE #3: REM SAVE-LINE 3
32 DATA 0, 0, 0, 0, 0, 0, 0, 0, 0      80 DATA 0, 7, 5, 5, 7, 4, 4, 0
33 DATA 0, 2, 2, 2, 2, 0, 2, 0      81 DATA 0, 7, 5, 5, 5, 7, 7, 1
34 DATA 0, 5, 5, 0, 0, 0, 0, 0      82 DATA 0, 7, 5, 5, 6, 6, 5, 0
35 DATA 0, 5, 7, 5, 5, 7, 5, 0      83 DATA 0, 7, 4, 7, 1, 1, 7, 0
36 DATA 0, 2, 7, 4, 7, 1, 7, 2      84 DATA 0, 7, 2, 2, 2, 2, 2, 0
37 DATA 0, 5, 1, 2, 2, 4, 5, 0      85 DATA 0, 5, 5, 5, 5, 5, 7, 0
38 DATA 0, 2, 5, 2, 6, 11, 7, 0      86 DATA 0, 5, 5, 5, 5, 5, 2, 0
39 DATA 0, 2, 4, 0, 0, 0, 0, 0      87 DATA 0, 5, 5, 7, 7, 7, 2, 0
40 DATA 0, 2, 4, 4, 4, 4, 2, 0      88 DATA 0, 5, 5, 2, 2, 5, 5, 0
41 DATA 0, 4, 2, 2, 2, 2, 4, 0      89 DATA 0, 5, 5, 5, 2, 2, 2, 0
42 DATA 0, 0, 5, 2, 7, 2, 5, 0      90 DATA 0, 7, 1, 2, 2, 4, 7, 0
43 DATA 0, 0, 2, 2, 7, 2, 2, 0      91 DATA 0, 6, 4, 4, 4, 4, 6, 0
44 DATA 0, 0, 0, 0, 0, 2, 2, 4      92 DATA 0, 4, 4, 2, 2, 1, 1, 0
45 DATA 0, 0, 0, 0, 7, 0, 0, 0      93 DATA 0, 3, 1, 1, 1, 1, 3, 0
46 DATA 0, 0, 0, 0, 0, 6, 6, 0      94 DATA 0, 2, 7, 2, 2, 2, 2, 0
47 DATA 0, 1, 1, 2, 2, 4, 4, 0      95 DATA 0, 0, 0, 0, 0, 0, 0, 15
48 DATA 0, 2, 5, 5, 5, 5, 2, 0      96 DATA 0, 2, 5, 4, 15, 4, 15, 0
49 DATA 0, 2, 6, 2, 2, 2, 7, 0      97 DATA 0, 0, 7, 1, 7, 5, 7, 0
50 DATA 0, 2, 5, 1, 2, 4, 7, 0      98 DATA 0, 4, 4, 7, 5, 5, 7, 0
51 DATA 0, 6, 1, 6, 1, 1, 6, 0      99 DATA 0, 0, 7, 4, 4, 4, 7, 0
52 DATA 0, 1, 3, 5, 5, 7, 1, 0      100 DATA 0, 1, 1, 7, 5, 5, 7, 0
53 DATA 0, 7, 4, 6, 1, 1, 6, 0      101 DATA 0, 0, 7, 5, 7, 4, 7, 0
54 DATA 0, 3, 4, 6, 5, 5, 2, 0      102 DATA 0, 6, 4, 6, 4, 4, 0
55 DATA 0, 7, 1, 2, 2, 4, 4, 0      103 DATA 0, 0, 7, 5, 5, 7, 1, 7
56 DATA 0, 2, 5, 2, 5, 5, 2, 0      104 DATA 0, 4, 4, 7, 5, 5, 5, 0
57 DATA 0, 2, 5, 5, 3, 1, 6, 0      105 DATA 0, 2, 0, 6, 2, 2, 7, 0
58 DATA 0, 0, 0, 2, 0, 0, 2, 0      106 DATA 0, 1, 0, 1, 1, 1, 5, 3
59 DATA 0, 0, 2, 0, 0, 2, 2, 4      107 DATA 0, 4, 5, 6, 5, 5, 5, 0
60 DATA 0, 0, 1, 2, 4, 2, 1, 0      108 DATA 0, 4, 4, 4, 4, 4, 3, 0
61 DATA 0, 0, 0, 7, 0, 7, 0, 0      109 DATA 0, 0, 5, 7, 7, 7, 5, 0
62 DATA 0, 0, 4, 2, 1, 2, 4, 0      110 DATA 0, 0, 7, 5, 5, 5, 5, 0
63 DATA 0, 2, 5, 1, 2, 0, 2, 0      111 DATA 0, 0, 7, 5, 5, 5, 7, 0
64 DATA 0, 3, 7, 5, 7, 4, 3, 0      112 DATA 0, 0, 7, 5, 5, 7, 4, 4
65 DATA 0, 7, 5, 5, 7, 5, 5, 0      113 DATA 0, 0, 7, 5, 5, 7, 1, 1
66 DATA 0, 6, 5, 6, 5, 5, 6, 0      114 DATA 0, 0, 7, 4, 4, 4, 4, 0
67 DATA 0, 3, 4, 4, 4, 4, 3, 0      115 DATA 0, 0, 7, 4, 7, 1, 7, 0
68 DATA 0, 6, 5, 5, 5, 5, 6, 0      116 DATA 0, 2, 7, 2, 2, 2, 3, 0
69 DATA 0, 7, 4, 6, 4, 4, 7, 0      117 DATA 0, 0, 5, 5, 5, 5, 7, 0
70 DATA 0, 7, 4, 6, 4, 4, 4, 0      118 DATA 0, 0, 5, 5, 5, 5, 2, 0
71 DATA 0, 3, 4, 4, 7, 5, 3, 0      119 DATA 0, 0, 5, 7, 7, 7, 2, 0
72 DATA 0, 5, 5, 7, 5, 5, 5, 0      120 DATA 0, 0, 5, 5, 2, 5, 5, 0
73 DATA 0, 7, 2, 2, 2, 2, 7, 0      121 DATA 0, 0, 5, 5, 5, 7, 1, 7
74 DATA 0, 1, 1, 1, 5, 5, 3, 0      122 DATA 0, 0, 7, 1, 2, 4, 7, 0
75 DATA 0, 5, 5, 6, 6, 5, 5, 0      123 DATA 0, 3, 2, 4, 2, 2, 3, 0
76 DATA 0, 4, 4, 4, 4, 4, 7, 0      124 DATA 0, 2, 2, 2, 2, 2, 2, 0
77 DATA 0, 5, 7, 7, 7, 5, 5, 0      125 DATA 0, 6, 2, 1, 2, 2, 6, 0
78 DATA 0, 7, 5, 5, 5, 5, 5, 0      126 DATA 0, 5, 10, 0, 0, 0, 0, 0
79 DATA 0, 7, 5, 5, 5, 5, 7, 0      127 DATA 7, 8, 11, 10, 11, 8, 9, 6

```



The reader of this article may well ask himself what the title is supposed to mean. It isn't a secret code, but a way in which to use the Spectrum and an 80-column printer with pinfeed, to print on the new "floppy" accept giro cards via Masterfile. (That widely-known database program for the Spectrum.) Just the job for many a club treasurer who wants to get his subs in from members using this new method of payment. One has to input the particulars of all members in the file, and after that has been done, the optically legible accept cards (OLAs)-new type- just roll out of your printer without the slightest problem. In about twenty minutes you can print around one hundred and fifty of these cards using Near Letter Quality. If you use the standard print method you can get more cards printed in the same time. Try and get that done on a typewriter! There is no way you will manage it.

While testing the program it goes without saying that I had the usual number of problems, but that is part of the challenge of the hobby. Another thing: I spent some time looking for a program like this with this routine. Many programs didn't have it, and if they did, the price of the program was around 2000 guilders. All the more reason to try and write a program myself.

So what did I use to get things right?

Hardware: a ZX Spectrum, the ZX LPRINT III as printer interface, and a Seikosha SP800.

Software: Masterfile with MF P utility and MF PRINT.

Finally of course I needed the details for the file, and a number of OLAs.

To clear up any misunderstandings; the optically legible part does not need to be printed. That has been taken care of by the Girobank or the Postbank. All we are concerned with is the address part, the amount involved, and other particulars.

## BUILD-UP OF THE FILE.

To make everything clear, I am going to start by showing you how I have Masterfile classified. (The specification of the fields)

in field A ( 4 char)	Title (Mr. Mrs. Miss.)
in field B ( 4 char)	Sorting name.
in field C (25 char)	Initials and name.
in field D (25 char)	Address
in field E ( 7 char)	Postal code
in field F (20 char)	Place name.
in field I ( 7 char)	Giro account number.
in field J (12 char)	Bank account number.
in field K ( 4 char)	OLA amount before decimal point.
in field L ( 2 char)	OLA amount after decimal point.
in field M ( 1 char)	Year involved.
in field N ( 3 char)	For example, Member code number
in field O ( 3 char)	Payment number.



## The PRINT-SPECIFICATION

With the help of the MFP utility program we now make up the printer specifications. For clarity's sake, the printer control codes that you see presently are of course meant for the combination ZX LPRINT III/ Seikosha, and may need to be modified for other printers and interfaces.

To get the Elite font I need:

```
LPRINT CHR$ 1;"2";CHR$ 27;CHR$ 77
```

For Italics Elite font we need:

```
LPRINT CHR$ 1;"4";CHR$ 27;CHR$ 77;CHR$ 27;CHR$ 52
```

The specification is in three parts: a general section, the heading, and the data specification.

For a good specification we need to input the following:-

LAY-OUT NUMBER .....	1	
LEFT MARGIN.....	0	
HEADER LINES.....	4	
LINES PER FILE .....	20	
FILES PER PAGE.....	1	
TOTAL NUMBER OF LINES.....	24	
FIELD ORDER.....	E	(post code)
PRINTER CODE FOR f .....	35	
PRINTER CODE FOR @ .....	64	

The heading could read as follows:

Hobby Club Subscription  
for 1987

We need the following to get that:

Heading : 1  
LINE ..... 1  
COLUMN..... 50

TEXT "Subscription Dues Hobby Club"

PRINTER CONTROL CODES (see above)  
1 2 27 77 and further zeroes (for Elite)

Heading : 2  
LINE ..... 2  
COLUMN..... 50

TEXT "for 1987"

PRINTER CONTROL CODES see above)  
all zeroes if you still want the Elite font.

In the third place, here are the details for the data specification in tabular form.



DATA REFERENCE	N	M	O	K	L	N	M	O	K	L	I	J	C	A	C	D	F	E	F
LINE	0	0	0	0	0	0	0	0	3	3	3	3	6	6	6	7	7	8	8
COLUMN	4	8	12	25	40	50	54	58	0	12	27	50	2	27	33	27	2	27	35
BREADTH	3	1	3	4	2	3	3	3	4	2	7	12	15	5	25	25	15	7	20
LENGTH	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
TEXT FILL OUT	N	N	N	Y	N	N	N	N	Y	N	N	N	N	N	N	N	N	N	N
EDIT NUM. DATA	N	N	N	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
START SYMBOL																			
TWO DEC PLACES	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
THOUSAND COMMA	N	N	N	Y	N	N	N	N	Y	N	N	N	N	N	N	N	N	N	N
COLUMN TOTAL	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N

PRINTER CONTROL CODES: all zeroes.

With these specifications you ought to be able to print the accept giro cards.

Finally, if you use a different font, then the columns may need modifying to some extent, but the "LINE" (the line height) is perfect with this routine.

In the next club magazine I will give you the specification in normal (Spectrum) Basic so that you can use this system in your own self-written program of membership files.

Lots of luck!

Jac. Witmer





## DAISY-MOUSE

Here's a small, but very nice little program, for those of you who are the fortunate owners of both the AMX mouse and a daisy wheel printer.

```
1 REM J.P.Damen/Almere-Haven
2 REM plot-program for a daisy wheel printer together
  with the AMX mouse.  (4 x A4 = 1 SCREENcopy)
4 CLEAR #
5 OPEN #3;"t"
6 RANDOMIZE USR 51912
8 LET xp=51925
9 LET yp=51926
10 INPUT "LOAD *1;"....."SCREEN$ ";a$
12 LOAD *1; a$ SCREEN$:*st.
14 INPUT "How many columns ? ";br
15 LET br=br*8
16 IF br>128 THEN LET br=128
18 INPUT "How many lines? ";hg
19 LET hg=hg*8
20 IF hg>88 THEN LET hg=88
22 LET x=PEEK xp: LET y=PEEK yp
24 IF x+br>255 THEN LET x=255-br
26 IF y+hg>190 THEN LET y=190-hg
28 PLOT x,y-15:*1.3
30 DRAW br,0: DRAW 0,hg
32 DRAW 0-br,0: DRAW 0,0-hg
34*upd.: IF PEEK 51920 THEN GO TO 38
36*1.3:*res.: GO TO 22
38 INPUT "Ready ? (paper in the printer?) ** Y/N ** ";j$
40 IF j$="n" THEN GO TO 34
42 IF j$="y" THEN GO TO 52
44 GO TO 38
50 REM ----- (print instructions)
52*res.
54 FOR f=y-15+hg TO y-15 STEP -1
56 LET a$=""
58 FOR g=x TO x+br
60 IF POINT (g,f) THEN LET a$=a$+"*"
61 GO TO 64
62 LET a$=a$+" "
64 NEXT g
66 LPRINT a$
68 NEXT f
70 INPUT "The same SCREEN ? (Y/N) ";j$
72 IF j$="n" THEN GO TO 10
74 IF j$="y" THEN GO TO 12
76 GO TO 70
80 CLEAR 44999: LOAD *1;"AMX"CODE
90 GO TO 2
100 SAVE *1;"*starprint" LINE 80
```

Jurgen Damen  
Almere-Haven



Recently, I received an article-- "Now that's what you're always asking for!" you'll say,-- that posed me a problem. "That's not the first time either." No, but I couldn't get the file to LOAD. All I could get was "Wrong file type," or something similar. "Well of course, you were just telling us about TW3, so stop it, and get a move on!"

TW3 doesn't SAVE text as CODE as do TW2 and SW (Spectral Writer)-almost in the same manner-, but as data files, to use the Microdrive and Interface 1 manual terminology.

I already had some experience with this and using a somewhat modified version of "file TO text" as published in IMPULS 11-11, I was successful in making such a "file" suitable for use with SW. Granted, with a question mark at the start of each line after the first because of the CHR\$ 10 (LF), but I finally got a completely different program. It showed no lines on screen because it doesn't need "keyword expansion" and all lines have to be 64 characters long; and it had a clever solution for the "EOF-STOP" matter where I just type in "RETURN."

```

1 LET k=2 TO 65: LET a=a+1: POKE a, CODE t$(k): NEXT k: RETURN
2 FOR r=2 TO 320: INPUT #3; LINE t$(): GO SUB 1:
  PRINT AT 5,16;r,: NEXT r: RETURN
>3 CLEAR 4E4: INPUT "LOAD-name: ";t$"Md-number:",a:
  OPEN #3;"m";a;t$:
  LET t$="The number of lines appears here."+
  "Type in 'RETURN' at 'End of file'.": PRINT ""t$
4 INPUT #3; LINE t$(): LET t$(2 TO )=t$: LET a=4E4. GO SUB 1:
  GO SUB 2: CLOSE #3
5 INPUT "SAVE-name: ";t$"Md-number/O for tape: ";d:
  IF d THEN SAVE "m";d;t$CODE 40001,a-4E4:
  VERIFY "m";d;t$CODE: STOP
6 SAVE t$CODE 40001,a-4E4: INPUT "VERIFY after ENTER ";a$
  VERIFY t$CODE
  
```

Make sure that you give t\$ in line 3 a length of 65 characters.

SAVE this program to cartridge with "tw3 TO tw2" LINE 3. The name "tw3 TO sw" is just as logical, if you want to use this for Spectral Writer, and there you can even let the r in line 2 run "TO 352". The r-loop is there by the way, to ensure that the text file doesn't get too long for TW2 or SW because if it did, the MC would be overwritten and that could result in a crash. The r is also used as a counter for the lines processed on screen.

This program will need modifying if the TW3 file has lines with more than 64 characters, and the first line may need to be modified too if a header and/or a footer has been used. Such a file can be recognised by the start character: only then a CHR\$ 255 (COPY).

As far as I know, TW3 has a routine for transferring TW2 files to TW3. With the above routine you now have the capability of doing the opposite.

Ed Weijgers



To get your own characters on the screen as well as via the printer, you need to have a set of them in RAM since TLW uses the ROM set via "Microprint" (mp). Your own set is situated below the "TLW2"CODE and above the "Top of text file space" (totfs) which we are going to lower. For codes 32 to 127 inclusive we need 96\*8 bytes and for that totfs has to drop from 49999 to 49231. To achieve that we have to POKE 79 at addresses 65252 and 65193, and then 192 at 65253 and 65194. The new set can now commence at address 49232. We then make a copy of the Spectrum set with:-

```
FOR z=0 TO 767: POKE (49232+z),PEEK (15616+z): NEXT z
```

Fix the new address in Mp with: POKE 63661,80 and POKE 63662,192 TLW will now work with the new set. POKE 63661,0 and POKE 63662,192 will always give you the Spectrum set back if you want it. Modify the "SAVE" lines with "TLW2"CODE 5000,768,15535+768 and add the following BASIC line:-

```
25 INPUT "Character to be changed ? ";z$:
PRINT z$;" Code ";CODE z$;" ";:
LET stchr=49232+(CODE z$-32)*8:
FOR z=stchr TO stchr+7: INPUT "Value ? ";y:
POKE z,y: PRINT PEEK z;" ";: NEXT z: STOP
```

1. Choose the Spectrum character you want to change, design a new one, RUN line 25, input the Spectrum character and the 8 new bytes.
2. RUN TLW and have a look at the result in VIDEO 60. VIDEO 80 is less important, and you do not use VIDEO 40 at all.
3. Repeat 1 and 2 if necessary until the result is as required. You can move the whole character left or right, or just "dots". Here are a couple of examples:-

```
Dutch      y   in code 123:  0 18  0 18 18 18  2 24
Dutch      Y   in code 125:  0 36 36 36  4  4 36 56
Plus or minus sign code 92:  0  0 16 56 16  0 56  0
A guilder sign in code 124:  0  4  8 28  8  8 16 64
```

The TLW screen consists of three status lines with their own attributes, and a fourth line which has the BORDER attributes. Beneath that we have the text window of twenty lines on which the "Help page" and the "Token page" can be called up. That part of the third line on which the prompts come has its own attributes as has the text page and the "Help-Token page." Everything is stored in TLW variables. The "EB" command does not give one all the possibilities there are, so do the following to get everything as you wish it to be.

```
FOR z=62015 TO 62020: POKE z,0: NEXT z:
POKE 62357,16: POKE 62367,16
```

To get the required colours, you must now POKE INK+8\*PAPER into the variables Text (52416), Help (64712), Border (65277), and Status (65278) and also Prompts (62951) but these with 8\*INK+PAPER. Make sure that the text file is empty and then SAVE the program.

E.P. van Westendorp



As one-time secretary of the DUC I have often worked with the Masterfile program, version 9: THE database program for the ZX Spectrum. I worked with three different versions:

The "ordinary" version of Masterfile

Masterfile Print, to get my files printed out.

Masterfile Merge, to get Data Merge with Tasword 3.

All three versions had the same shortcoming: If I wanted to LOAD or SAVE a file, I had to type in the program name first and THEN choose the drive. I wasn't pleased with that situation and decided that I would just change it. As if it were that easy. I thought I had it all working well until I needed to type in a field name. The black box in front of me asked, " Drive 1 or 2? (1/2)" which to me seemed a stupid question. So, since I am not very tenacious, I quickly got out the old version again.

Just recently, I had to face the facts again. I got a letter from a Mr. Lagerweij in Wekerom which brought me, EUREKA, the solution. It is a machine code routine which arranges that the CATalogue is shown on screen before one enters the LOAD or SAVE name. This rekindled the fire of my curiosity, and I decided to try again to get things done in BASIC. Here is my solution:-

```

1 GO TO USR VAL "58285"
50 PRINT AT VAL "15",VAL "5";" Drive 1 or 2 ? (1/2) "
60 LET d=CODE INKEY$-VAL "48": IF d<>1 AND d<>2 THEN GO TO VAL
  "60"
65 RETURN
4000 IF c$( TO 4)="Give" OR c$( TO 4)="SAVE" THEN GO SUB 50:
  CLS: CAT d
4005 INPUT PAPER VAL "7";(c$( TO VAL "32")); LINE c$:GO TO USR R

```

the rest of the BASIC.

Mr. Lagerweij's solution in short is as follows: RAMTOP gets moved down 16 bytes, and in those 16 bytes we put a routine which will in some cases (just before an INPUT statement) make sure that the program jumps to LINE 4000 which contains a CAT command. In other cases, LINE 4005 is called up. (see line 4005 in the above LISTING.)

However, as stated earlier, the BASIC solution above works just as well and is a little easier to follow.

After finding this solution I modified my various Masterfile programs. I did a nice menu, options for each Masterfile and MF utility, and of course I also incorporated Marcel van Dongen's CAT3WIDE.

The following files are on DUCdisk 4:

- \*mast'file : the menu program
- MF\_NORM\_B : basic masterfile normal
- MF\_PRINT\_B : basic masterfile print
- MF\_MERGE\_B : basic masterfile tasmerge
- MF\_UTILITY : masterfile utility



Put these files on a formatted disk. You can rename "\*mast'file" if you like and call it say "run". The program won't work right off. Because of copyright matters and sytem differences you have to take care of a couple of files yourself. These are:-

- 6116 C : your 6116-codeblock
- BUFFDUMP\_C : your screencopy-routine in the printerbuffer
- MF\_CODE\_C : your masterfile v.9 code block
- MF\_POVLY\_C : your m/c overlay, which can be found on the original Masterfile cassette.

You will have nine files on the disk at the end of this. Those of us without a (large) printer can make up the "BUFFDUMP\_C" file as follows:

```
POKE 23296,201      (201=RETURN INSTRUCTION)
SAVE *1;"BUFFDUMP_C"CODE 23296,1.
```

Are there still people out there who do not have a 6116? Surely not? If there are, get thee swiftly to an electronics shop and get yourself one of those chips sharpish! Be sure to ask for a REAL 6116 10-power version.

One other remark about Masterfile Print. It doesn't really work well. If you LOAD a file, and say select or modify it, and then want to print it all out, it will crash as sure as eggs is eggs. So, you have to select with the ordinary Masterfile, SAVE the file, then reset, and after that LOAD in Masterfile Print. LOAD the file, LOAD the utility string, and away you can go printing.

Who can write a little program to solve that problem?  
Don't all rush at it at once!!

Dick Kruithof

-----  
<<<< ADVERTISEMENT >>>>

Garry Rowland  
24 Parsloes Avenue  
DAGENHAM  
Essex RM9 5NX  
England

I've worked as a layout artist for ten years in advertising and I'm now interested in designing title pages, screen layouts and sprites for authors who have yet to master the art software package. The cost of the design service will be #6 an hour, but I can offer #10 off the first commission. A title page screen takes an average of four and a half hours to complete (Sumo took 6 hours to complete). Anyone who is interested would need to send a written brief or rough sketch of what they want. I would send them an estimate, and if the estimate was accepted, proceed with the work. The client would then be sent a printout for approval and billed. The finalised SCREEN\$ file would then be sent on disc or tape.

G. Rowland.



## M'DRIVE: LOADING WITHOUT AUTORUN

There are a few Spectrum programs that are very difficult to LIST or get in to. Using all manner of "magic buttons," it is possible to get into a program which is already running, but usually the program has been changed in essence, and one can only SAVE "funny" blocks and odds and ends, which is exactly what those gadgets do.

It would be a big help therefore if we had better "hacker's tools," It was clear that I needed to make something that would LOAD a BASIC program with Autorun, without having it start up.

As I wanted to keep it short, it has become a fairly rough instrument, for it STOPS with an error message if things work properly. You can then have a look at the LISTing, at least if it is not protected with colour codes. Sometimes, the printer will go mad at "LLIST" because it receives codes.

Still, with a bit of skill.....

The help program which follows, puts a machine code routine of 68 bytes in to a string, after RUN, and SAVES the c\$ as DATA to Md 1.

```
1 DIM c$(68): LET s=6362
2 FOR k=1 TO 68:
  READ c: LET c$(k)=CHR$ c: LET s=s-c: NEXT k:
  IF s THEN PRINT "Error in DATA ": STOP
3 SAVE *"m";1;"$" DATA c$(): VERIFY *"m";1;"$" DATA c$()
10 DATA 33, 128, 255, 34, 237, 92, 207, 50
20 DATA 1, 164, 255, 237, 67, 93, 92, 253
30 DATA 203, 124, 230, 205, 1, 7, 33, 230
40 DATA 92, 17, 222, 92, 1, 7, 0, 237
50 DATA 176, 205, 128, 21, 62, 255, 50, 238
60 DATA 92, 195, 163, 9, 239, 42, 34, 77
70 DATA 34, 59, 176, 34, 0, 34, 59, 34
80 DATA 0, 0, 0, 0, 0, 0, 0, 0
90 DATA 0, 0, 34, 13
```

If you are using version 2/3 of Interface ONE you should alter the following:

```
1 DIM c$(68): LET s=6355
50 DATA 176, 205, 113, 25, 62, 255, 50, 238
60 DATA 92, 195, 167, 9, 239, 42, 34, 77
```

NEW when c\$ has been SAVED and type in the following program:

```
1 INPUT "LOAD-name:",c$(57 TO 66),"Md-number:",c$(53)
2 FOR k=1 TO 68: POKE 65399+k,CODE c$(k): NEXT k
3 RANDOMIZE USR 65400
```

Finally, you can get the string with machine code back using LOAD \*"m";1;"\$DATA c\$(), and with SAVE \*"m";1 "STOP run" LINE 0 you can put this "hacker's tool" on your cartridge in drive 1, ready for use.



To use it in Md you enter LOAD\*"m";?;"STOP run". Before you answer the questions about the LOAD-name and the Md-number you have to have the cartridge with the desired program in the proper drive. (If necessary, put CHR\$ 0+ in front of the LOAD-name using the cursor keys.)

The program then POKES the machine code from c\$ to the UDG area, calls it up at address 65400, LOADs the program with the variables and STOPs with "Nonsense in Basic" if everything is right. Lots of luck!

*E P van Westendorp - Reigersln 22 - 2215 NN Voorhout - Holland*

---

## BLOCKLENGTH

The following program helps you work that out. There are two important values:

```
(256*PEEK 23297)+PEEK 23296 = Sectorlength  
POKE 23298,1 = drive 1, POKE 23298,2 = drive 2
```

```
1>PROGRAM 'SECTORLEN'  
2 REM (c) 1987 R.O.Aalders  
10 FOR x=23296 TO 23326  
20 READ y: POKE x,y  
30 NEXT x  
40 RANDOMIZE USR 23299  
50 PRINT (256*PEEK 23297)+PEEK 23296  
60 STOP  
100 DATA 0,0,1,243,205,8,23,6,0,247,18,34,20,91,58,2,91,6,4,205,  
0,0,237,67,0,91,205,72,23,251,201
```

Bon chance!!

Rudie Aalders



## ABOUT "THE ARTIST II"

The Artist II Pagemaker does have a print facility, but it provides only a faint printout that doesn't quite fill an A4 page. The PPRINT program makes an emphasised print that also fits the A4 page much better.

The format of a Pagemaker file is more straightforward than a SCREEN\$ file. The page is split into four smaller files to suit Pagemaker's memory requirements. Each file consists of two adjacent screens, 12288 bytes of pixel information, which can be thought of as 24 lines of 64 characters. These bytes are not organised in the same way as a Spectrum SCREEN\$ file; a Pagemaker file isn't split into segments and the attributes for the two screens in each file are placed in one block at the end. As far as I can tell, the attribute file is ignored by the Pagemaker print routines, and is also ignored in the PPRINT program.

Printing a Pagemaker file, or even changing its contents, is therefore quite straightforward. Load each file and set up a pointer to the start of the file; send a line of characters to the printer and then add 512 to the pointer (eight pixel rows by 64 characters). Repeat for 24 lines, and do this for each of the four files.

The machine code program handles the part which sends one line of characters to the printer. If the offset is changed from 64 to 128, the program will send two incomplete lines to the printer which can be used to give a quarter sized mode.

The BASIC program starts by loading the complete file (the four sub-files) to RAM disc. In A4 mode the USR code sends each pixel twice, doubling the length of the line. The BASIC program sends a line, and a small linefeed (1/256th inch), then sends the line again for emphasis (if required). The print codes used are described in figure one.

The last part of the BASIC program prints a quarter sized page. This is done by interlacing the lines. My printer manual gives the spacing of the printhead pins as 1/72 inch. So by printing alternate rows of pixels across two character lines and sending a 1/144 inch line feed (half the distance between two pins), a second pass initiated by the BASIC program will print the even pixel rows between the odd rows (as shown in figure two).

```
10 REM ARTIST II (Special 128+2 version)
20 REM OPUS DISC LOADER
30 CLEAR 25910
40 DATA 32768,6912,32768,2048,34816,1728,39168
50 DATA 768,25911,256,26096,39440
60 CLS: PRINT "INSERT FORMATTED DISK INTO"
70 PRINT "DRIVE 1 AND START TAPE"
80 FOR L=1 TO 6
90 GO SUB 130: READ B,C
100 SAVE *1;"ARTIST"+STR$ L CODE B,C
110 NEXT L
120 SAVE *1;"run" LINE 160: STOP
```



## BIGPRINT

The following program allows you to print text or screen in very large format. It works on all 'large' printers. The text is printed horizontally on chainfeed paper, and the user can determine the height and width of the characters.

It is necessary to load a character set; be it the standard spectrum-set or user-defined graphics.

### THE BASIC PROGRAM:

```
10 BORDER 0: PAPER 0: INK 7: CLS
15 IF USR 8 <> 2.1 THEN PRINT "WRONG ROM-VERSION":
    STOP
20 CLEAR 49999: LOAD *1;"BIGCODE" CODE
30 INPUT "NAME OF THE SET ? ";N$
40 LOAD *1;N$ CODE 6E4
50 RANDOMIZE USR 50102
60 CLS
70 INPUT "TEXT ? ";T$
80 LET A=LEN T$
90 POKE 23296,A
100 FOR X=23297 TO (23296+A): LET B=X-23296:
    POKE X,CODE T$(B TO B):
    NEXT X
110 INPUT "HIGHT (1-10)? ";H:
    POKE 50040,H: POKE 500 90,H
120 INPUT "WIDTH ? ";D: POKE 50029,D
130 INPUT "NO. OF LINES BETWEEN CHARACTERS? ";LF: POKE 50070,LF
140 CLS: PRINT AT 10,10;"PRINTING"
150 RANDOMIZE USR 5E4
160 CLS: INPUT "LOAD NEW SET (Y/N)? ";A$
170 IF A$<>"Y" AND A$<>"y" AND A$<>"N" AND A$<>"n" THEN GOTO 160
180 IF A$="Y" OR A$="y" THEN GOTO 30
190 GOTO 60
200 SAVE *1;"BIGPRINT" LINE 10
```

--NEXT PAGE----->

```
<-----
130 PRINT AT 10,11;FLASH 0;"START TAPE";AT 19,0;
140 LOAD "" CODE
150 PRINT AT 10,11; FLASH 1;"STOP TAPE": RETURN
160 CLEAR 25910
170 PAPER 0: BORDER 0: INK 7: PAPER 8: INK 8: BRIGHT 8
180 LOAD *1;"ARTIST II"SCREEN$
190 FOR L=2 TO 5: LOAD *1;"ARTIST"+STR$ L CODE : NEXT L
200 LET C=USR 32771: LET C=USR 25920
210 LOAD *1;"ARTIST6"CODE
220 LOAD *1;"ARTIST II"
```

Use the above program to load Artist II m/c code programs onto disc. Then rewind tape and load Artist II. Use the menu to make a controlled return to BASIC and make any modifications required, like OPEN #3;"b", then save the BASIC program using the filename "ARTIST II".

G. Rowland



The machinecode, to be entered using Rudie's machinecode loader.

Start=50000; Length=159

```
50000 cd081721005b4621015bc5e57e2160e91469
50016 110800471910fd0608c5e57e0605c5061170
50032 08c5cb07f5383206032620c5cd0b15c11472
50048 10f7f1c110eb260af5cd0b15f1c110de2150
50064 e1c12310d40604260ac5cd0b15c110f71629
50080 e1c12310b5cd4817c90603262ac5cd0b1653
50096 15c110f718cc2168ea065ec5e51e80061766
50112 010e00e57ba6fe00280379804fcb20231428
50128 30f2e1c5cb3b30e7110700060819d1731640
50144 2b10fbe1c11108001910d0c9000000001203
```

#### HOW IT WORKS:

After reading in the set, a RANDOMIZE USR 50102 is executed. That is where we have the routine to turn the set 45 degrees, so that we can get the text horizontal on the chainfeed paper.

Of course, you can always skip this POKE-command, and have your text printed vertically on paper.

Now you input text, hight etc, and these values are POKEd into the printroutine.

At adress 50092 is the code for the '\*' -character. This can be replaced as you wish by eg. '#' or '@' ... For those of you who own a printer with interchangeable chars, it is possible to replace the '\*' by a little black square.

#### FINALLY:

I would be glad to receive tips or criticisms on this routine. For example: How to get this program working with other ROM versions than the 2.1.

I wish everyone good luck with this program.

MARCO BAAIJEN  
JAGERMEESTER 11  
6713 KE EDE.  
THE NETHERLANDS



## PROGRAMBANK

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PLEASE NOTE: DUE TO UNDERSTAFFING, DUCDISCS 1-3 ARE ONLY AVAILABLE IN THE DUTCH LANGUAGE. SOME PROGS AND ROUTINES ARE IN ENGLISH, BUT MOST REQUIRE PATIENCE AND KNOWLEDGE OF AT LEAST BASIC TO UNDERSTAND.

Orders are placed by transferring the correct amount to the giro account mentioned in the colofon, stating what the amount is for. If this is not possible, cash or a cheque can be sent to Rudie Aalders, Furkabaan 625, 3254 ZE Utrecht, The Netherlands.

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All other prices refer only to the program, and not to the disc on which they come. Please add Hfl 10,-- for each disc. By adding up the lengths of the progs you order, you can work out how many discs you will need. Don't forget a disc can only hold 178k.

Just before the previous magazine was ready for mailing, we heard that COMBI 2.0 was ready. As we could not review it then we do so now.

COMBI 2.0 is a machine language utility for ZX Spectrum and OPUS Discovery, containing some familiar routines like TRINIDAD and a customised version of ULTI - MATE. Some of this prog's options can now be used in conjunction with a printer. As there are so many types of printers around, there are a number of versions of COMBI 2.0; if these do not suffice, we will be producing other versions as well. All versions will be sent to you on disc. Hence the fact that COMBI 2.0 has an "all-in" price.



This program allows you to format discs to any format you wish, within the physical capacity of the drive. This is why the author speaks of: "to compose a disc"! Have a CAT on screen (64-col.) or on printer, alphabetical or not. Examine your discette. It will show you in what way the disc is formatted, the number of blocks in the CAT; it can even perform a block test. This way you can check to see whether the disc has been formatted as you wanted.

Discettes can be "compacted" (MOVER), you can rename them or use the ULTI-MATE option to go back to the main menu of COMBI 2.0. Initialise your printer from within the program, and customise the program for 1 or 2 drives. I think that about 99% of the DUC members will be able to use this program with their printer. But of course it is also very handy even if you do not own a printer. The program is 'served' with a printed (dutch) manual.

AUDIOFILE is a register program for audiofreaks, who wish to register their record collection in the computer. It is based on Random Access Files and only works on BETABASIC 3.0 or higher.

LINKER is another product from NDP fitting into the LINK-series. The layout is almost identical to LINK-ED; if you know that, you will feel at home quickly with this prog. Its function is to transfer programs, files, etc. to other discs using the ramdisc (so heartbreakingly called for a few issues back!). You can select about 30k of programs without having to change discs more than once. If you have a double drive you miss all the fun of changing, of course. Because this program is written in machine code, all functions are executed at high speed. There is a complete range of options available to select files, making this program exceedingly flexible and versatile.

Finally, DUCDISC-3!!! It contains the following programs:

- MODELBUILD : Runs on BETABASIC 3.0, meant for the model builders among us. It scales down from real size and vice versa, and can calculate from scale to scale. Contains the routines MEMO and CALCULATOR, discussed earlier.
- HEWITTrun : A "run"program orientated on the 128k menus. Of course you can also use it in 48k. Has been published in ZX-Computing.
- BIG PRINT : Use your printer to make giant size banners.
- CAT??WIDE : Until now we could only CAT in 1 or 3 columns. Now decide for yourself how many you want. Using BETABASIC 3.0 with CSIZE 4,8 you could have 5 columns
- OMNIPRINT : To combine with OMNICALC, allowing you to print the contents of the spreadsheet any way you want. Eg. together with column- and line numbers or letters.

----->



## CLEAN-UP : DEL T\$

Have you ever SAVED away some little program -just to have it out of the way- and then later forget to remove it from the disc Leaving you with a disc full of short progs and routines which you can't for the life of you recall what they were or did? It would be nice to 'ERASE', them all, if only you could discern which were which. This program solves that problem. We could call it THE SPRING CLEANER. All you have to do is precede temporary SAVES with the prefix 'T\$' or 't\$'. The program then takes care of the cleaning up.

NB. The program -temporarily- makes use of the ramdisc.

```
1 CLEAR 32767: FORMAT "m";5;"RAMDISK"
5 CLS : REM 1986:P.Spoelstra
10 PRINT "    T$- ERASER"
20 PRINT "'Destroy all programs on disc'"preceded by t$
   or T$."'''
25 LET notf=1
30 PRINT #1;"Insert disc": PAUSE 0
40 OPEN #5;"m";5;"CATFt$E" OUT
50 CAT #5;"m";1
60 CLOSE #5
70 OPEN #5;"m";5;"CATFt$E"IN
80 INPUT #5; LINE a$
81 INPUT #5; LINE a$
90 PRINT #5;: IF USR 432=0 THEN GO TO 140
91 INPUT #5; LINE a$
100 IF LEN a$<2 THEN GO TO 90
110 LET h$=a$(1 TO 2)
120 IF h$="t$" OR h$="T$" THEN PRINT "Erasing: ";a$: ERASE "m"
   ;1;a$: LET notf=0
130 GO TO 90
140 CLOSE #5: ERASE "m";5;"CATFt$E"
150 IF notf THEN PRINT "No 'T$'-files found."
155 PAUSE 0
160 CLEAR USR "a": REM erase ramdisk
161 LOAD *SGN PI;"run"
```

P.Spoelstra

-----  
<-----  
DAISYPRINT : Use the printerport of the AMX-mouse interface to  
make a screendump to a daisywheel-printer.  
WORDFINDER : See previous magazines.  
DAMENrun : "run"-program built to put the CAT in a \$string  
routine.  
INDEX : Register program.  
MAH-YONG : Game in BB 3.0  
YATZEE : Idem.  
KNITPATTERNS: To design knitting patterns. Or any other pattern  
for that matter.

DUCDISC-4 is in the making. But, I thought this would suffice  
for now. Please take note that the programs mentioned are only  
available to DUC members! (Many of the programs would not work  
on a SPECTRUM without the DISCOVERY anyway!)

Ton Al.



## EDITORS, ASSEMBLERS AND MONITORS

If you intend developing routines in machine code you will probably find an Editor/Assembler/Monitor very handy.

An Editor is a program with which you make a text file naming all the instructions. Using lables, you gain a good oversight over what may otherwise be a jungle of commands and loops. So, an Editor is a tool to help us look at routines in another way.

An Assembler is a program which turns into a machine code routine the text file you have just created with the Editor. You might say it has something in common with a compiler. Both are used to turn a rather general description into machine language.

A Monitor is a program which helps us take a look at an existing routine. This gives us insight into the structure of a program, or helps us find out what went wrong in our own program.

For OPUS Discovery users there are three packages available. A package consists of all three the abovementioned programs. We have tested these for our members. The packages are:

ASTRUM +	Bradway Software	9 Pounds
DEVPAC	HiSoft	17 Pounds
Micass/Dismon	---	50 DMark

Please note that the Micass/Dismon package is actually a combination. You can also order the two parts separately. Micass also allows for extension for Macro use.

ASTRUM+ is a combination of programs allowing users to compile or analyse machine code routines. The author of ASTRUM+ was so pleased with his creation that he says you'll never use any other once you've tried his. He is even convinced that you will convert all your previous attempts to ASTRUM+.

ASTRUM+ contains following programs:

- Assembler- and Editor-program
- (Microdrive/Opus disc) Header reader
- (Microdrive/Opus disc) File Copier
- Text convertor
- Monitor-programs ( 3 \* )
- Creator-programs ( 3 \* )
- Library-source-CODE
- Definer

As the text only concerns the achievements of the Assembler, Editor- and Monitor-programs, I would like to point out some facts. The Header-reader, the File-copier and Library- source-CODE (a file containing addresses of ROM-routines and system-variables) are in fact superfluous programs. You will most likely load them, smile in recognitin or growl in contempt, and forget them.



The text convertor is a program to convert text sources from DEVpac, Machine-Lightning, OCP and Editas into ASTRUM+-text-sources. I have mentioned this before. Creator is a program which changes routines into Astrum+-textsources.

Both these progs have a disadvantage. They cannot cope with the limits of ASTRUM+ text-sources: these have a max of 11 Kbyte! Both progs waltz right over this and create perfectly useless files!

#### THE EDITOR/ASSEMBLER.

ASTRUM+'s Editor is a joy to behold, but also to be wary of. The Editor is of the ON\_SCREEN\$-type, i.e. you change text by simply typing over it. No more line numbers!

The disadvantage is that you sometimes get lost in the text. You cannot go through the text step-wise, for it constantly moves text into the screen-memory buffer. From here it gets saved and the screen is built up from scratch. This definitely delays going through the text.

This has all been avoided by certain "search-commands". You can go back to the start of the text and then search for defined words. Another disadvantage of this method is that ASTRUM+ works with 32 CHR\$/line on the screen, but does allow 256 bytes per line. If you have more than 32 CHR\$/line (eg. comments), this will cause an irritating screen-flicker. This needs a better solution.

Working ON\_SCREEN\$ offers many advantages. It is faster, and often more accurate than line-oriented editors. This is the singular great advantage of ASTRUM+. ASTRUM+ works with "PULL-DOWN" menus. This is another advantage, as you can call them at whim. There are 6 menus: MODE, FILE, FIND, COMPILE, INFO and BLOCK.

The Assembler is as cumbersome as the Editor is good. It allows MULTI-paging (a source-text spread over a number of files), which could make you lose oversight.

The EDITOR allows source-texts of 11 Kbyte, so that with a 1k routine you should already think MULTI-paging. The Assembler is rather rigid, straightforward but tricky in use as it is separate from the EDITOR. It stops at every error, making you go back to the EDITOR; or it can signal so many errors that the topmost error is scrolled off-screen. The Assembler certainly does not fit well into this whole.

#### THE MONITOR.

The Monitor works well with ASTRUM+, but contains so many options that it becomes cumbersome. Some of these options are: Break points, a selection of channels to which the info must be sent, ports in/out, etc.



Routines can be too complete. For this reason I left the ASTRUM+- Monitor for what it is and used my own monitor as it should be used: with confidence in its capability and knowing exactly what it is doing at any given point. This is often a better basis for use than a multitude of options you hardly ever use anyway.

#### CONCLUSION.

Giving a simple conclusion to this review is almost impossible. The program is pretty, but can be ugly. It has many options, but these make it tricky to use. You can enjoy, but also work up the old blood pressure.

ASTRUM+ is not a package for beginners. You really have to know a bit about machine-code to be able to use it effectively. Taking this into account, I certainly can advise experienced mc'ers to use the Editor part.

If we evaluate the MULTI-paging capability, ASTRUM+ loses points. It certainly does not live up to the expectations of the "big guys" among us. The ASSEMBLER breaks down the reputation built up by the EDITOR.

ASTRUM+ is only handy in use because of the programs around it. These additional programs save ASTRUM+ from a totally negative review. If the author of the program, Robert Schafer, could make the ASSEMBLER match the EDITOR, he'd have one hell of a program, in my view. Until such time, I have my doubts about it.

Rudie Aalders

#### MICASS 2.2/DISMON

Is Micass version 2.2 something new for us? No! Micass is nothing new to computers, but it is a welcome supplement to the world of assemblers/disassemblers. Many have passed this way before, so we ask ourselves "why another one?"

It's this way with cars and computers. Each has his own preference and finds one better than another, because of options, user friendliness, etc.

Despite trusting HiSoft's DEVPAC, I sat down to look at Micass carefully. I quickly found a disappointing feature: the accompanying text (usually in English) was in the original German. I think this is a disadvantage if the prog. is to be sold outside of the GDR!

But, on to the program.

The cassette contains much more than you really expect. There's a 16K- and a 48K-version of the disassembler, an assembler(Macro), a customising program for various drives, option 32/64 chars per line and a conversion program for EDITAS (Picturesque) to Micass. At first glance a package of progs like this is a definite boon, but once again I must warn beginners



that this is not the package for them. Because of its many capabilities, it is fun to work with if you're experienced. It is not very large, so it leaves enough room for listings, loading, saving and verifying the various mediums. The possibility of jumping the Assembler about between monitor and disassembler is just one of the positive points.

But, the instructions are not simple.

No 1-letter commands, but a mixture of 1, 2, 3 or 4 letters, which can be quite confusing, so that you will always need a list beside you.

Some examples:

A.	Auto linenumbers (including the point)		
AS.	Assemble	MON.	Monitor
C.	Copy	ME.	Memory
CL.	Clear	MER.	Merge
*C	*Clear	*M.	*Merge

As you see: confusing commands which you will have to learn by heart; a big trick if you also use other progs regularly. Beginners - I warned you! For the others this is quite a reasonable program. It offers more than most packages, plus the possibility of improving your German!

J. Koster

DEVPAC

DEVPAC will be reviewed a next time.

---

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12 ... PRINTING OLA's  
15 ... DAISYMOUSE  
16 ... USING "TASWORD THREE"-FILES WITH TASWORD TWO  
17 ... YOUR OWN CHR\$ IN "LAST WORD 2.1"  
18 ... MASTERFILE ON DUCDISC 4  
20 ... M'DRIVE: LOADING WITHOUT AUTODRIVE  
21 ... BLOCKLENGTH  
22 ... ABOUT "THE ARTIST II"  
23 ... BIGPRINT  
25 ... PROGRAMBANK  
27 ... CLEAN UP : DEL T\$  
28 ... EDITORS, ASSEMBLERS AND MONITORS



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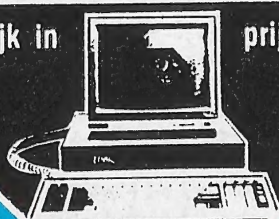
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